NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho (PIH) **REPORT FOR:** **MONTH:** October **YEAR:** 2017
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Travis Wyatt Service Hydrologist / Acting **DATE:** November 27, 2017
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

X **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

Most of the area saw well below normal precipitation for the month. The five climate stations (Burley, Challis, Idaho Falls, Pocatello and Stanley) ranged from 0.13 inch of precipitation (-0.63 below average) for Burley to 1.39 inches of precipitation (-0.08 below average) for Stanley. There were two precipitation records for the month of October for our five climate locations: one in Challis and one in Stanley. The highest recorded monthly precipitation totals (non-SNOTEL and non-RAWS) were 2.53, 1.39, and 1.37 inches respectively at the Driggs CO-OP, Stanley Ranger, and the Tetonia Experimental stations. The highest recorded 24-hr precipitation (non-SNOTEL and non-RAWS) occurred at the Driggs CO-OP, Bellevue CoCoRaHS and the Stanley Ranger stations where 1.77, 0.64 and 0.63 fell respectively on the 4th, 5th and 20th . All basins were below normal. Basin ranged from 22 to 80 percent of normal. The basins receiving the greatest precipitation were the Teton, Big Wood Basin abv Hailey and the Big Wood Basin receiving 80%, 72%, and 72% of average precipitation respectively for the month of October-based on SNOTEL data. The basins receiving the least precipitation were the Malad, Blackfoot, Bear river abv WY-ID line, and the Bear river abv ID-UT line receiving 22%, 26%, 26%, and 29% respectively for the month of October-based on SNOTEL data.

Mean average temperatures ranged from 34.9 degrees F for Island Park to 48.8 degrees F for Shoshone across the HSA. Most of the area was -3 to -6 degrees below normal with our extreme Northwest areas -1 to -3 below normal. The five climate stations ranged from -1.4 degrees below normal for Stanley to -3.6 degrees below normal for Idaho Falls. There was one low temperature record in Stanley near the middle of the month of October for our five climate locations. Of the data available for the month, the stations (non-SNOTEL and non-RAWS) within the HSA reaching the highest 24-hour temperatures were Minidoka Dam COOP, Oakley COOP, and Burley Airport reaching 79°F, 77°F, and 77°F respectively on the 20th, 20th and 19th. The stations (non-SNOTEL and non-RAWS) with the lowest recorded temperature were the Stanley and Hamer COOP stations at 6°F and 9°F respectively on the 15th and 31st .

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the eastern Idaho forecast is a 40 to 50% percent chance for below normal temperatures and a 40 to 60 percent chance for below normal precipitation. The one-month forecast graphics are below. For the three-month outlook, the temperature forecast is a 33 percent chance to be above normal for our extreme southern areas and equal chances for above or below normal temperatures elsewhere. As for three-month outlook for precipitation, the outlook is a 33 to 40% percent chance for above normal.

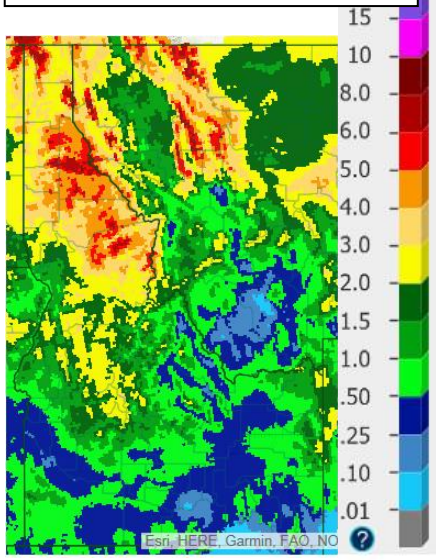
Storage for reservoirs in the Upper Snake River basin system for October decreased by 10% over the month of September with irrigation demand dropping off and streamflow above normal. As of November 21, 2017 the Upper Snake River system was sitting at 82% of capacity. Compared to last year at that time, it was about 42% of capacity. As of October 31, 2017, Oakley, Little Wood, Ririe, American Falls, and Magic had the lowest percent of average capacity at 39%, 40%, 51%, 63%, and 65% of average respectively. As of November 21, 2017, Milner had 47% of average. All other reservoirs were at or above 74% capacity. All reservoirs as of October 31, 2017 were 105 % or higher above average for that time of year. Some reservoirs were well above average for that time of year. Mackay, Magic and American Falls reservoirs were at 374%, 229% and 195% above average for that time of year.

Current streamflow conditions in eastern Idaho are much above normal for the Big Wood, Big Lost, and the headwaters of the Salmon. The rest of the basins are above normal (see USGS streamflow graphic below).

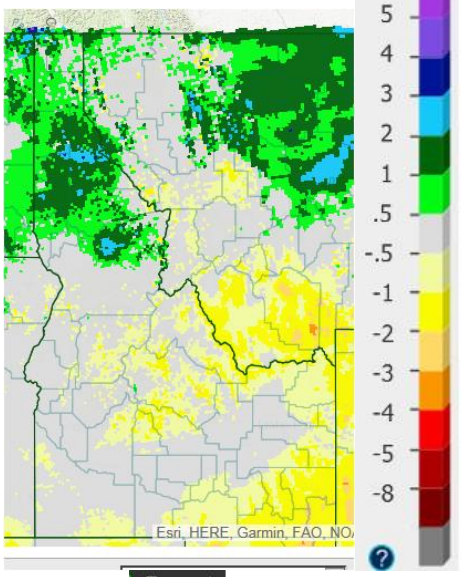
Drought conditions showed the extreme northern section of the panhandle of Idaho being abnormally dry as reflected on the latest U.S. Drought Monitor. The latest update of the U.S. Seasonal Drought Outlook shows the panhandle of Idaho dropping out of drought conditions showing none of the state in any type of drought.

Precipitation:

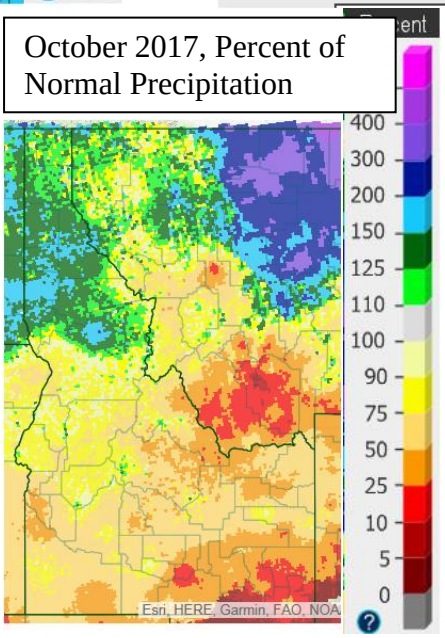
October 2017, Observed Precipitation



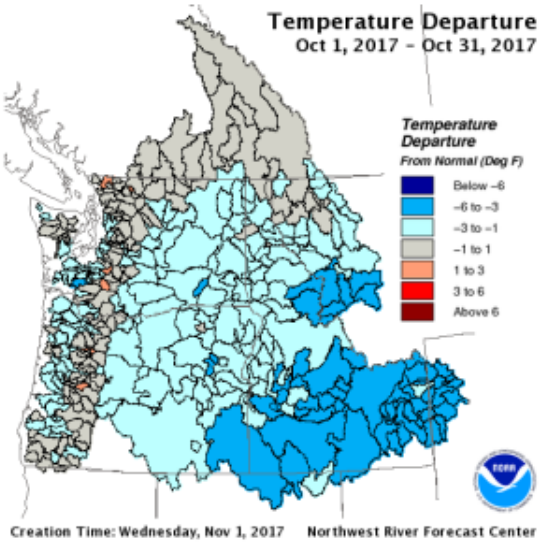
October 2017, Departure from Normal Precipitation



October 2017, Percent of Normal Precipitation



http://water.weather.gov/precip/



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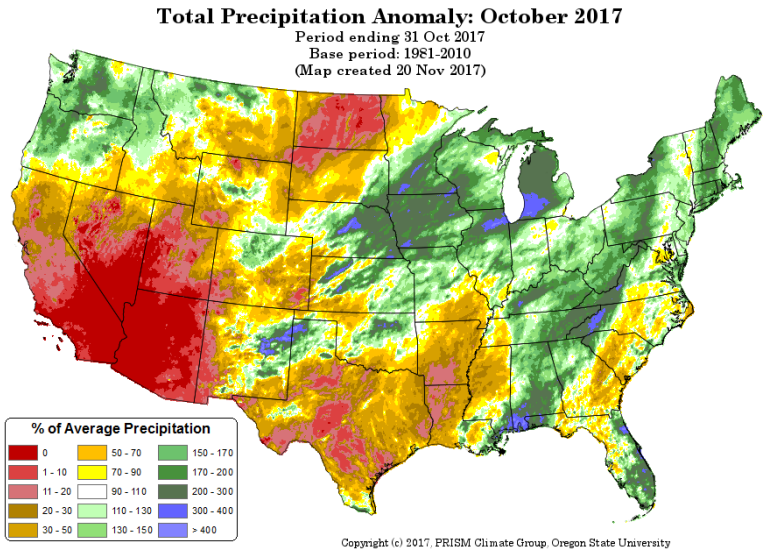
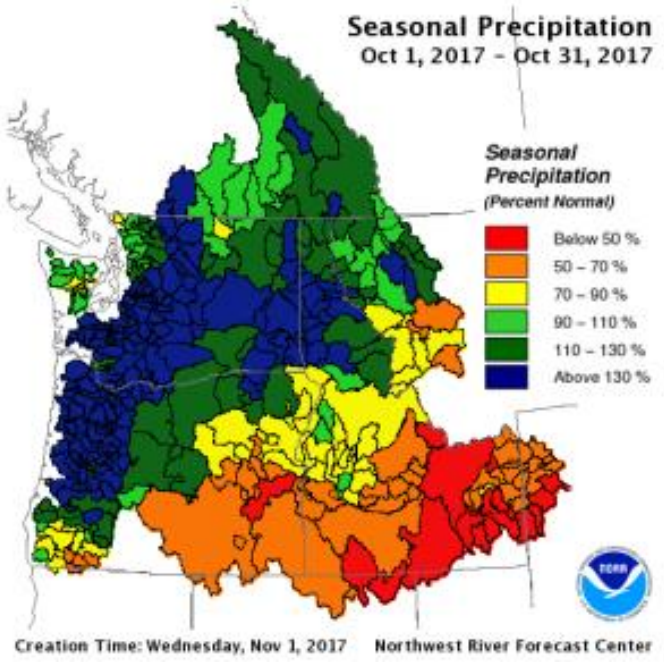


http://prism.oregonstate.edu/comparisons/anomalies.php



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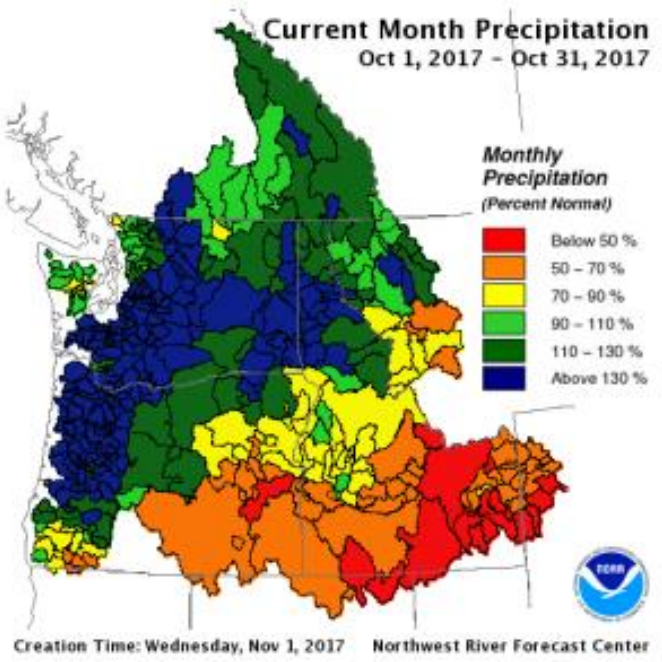

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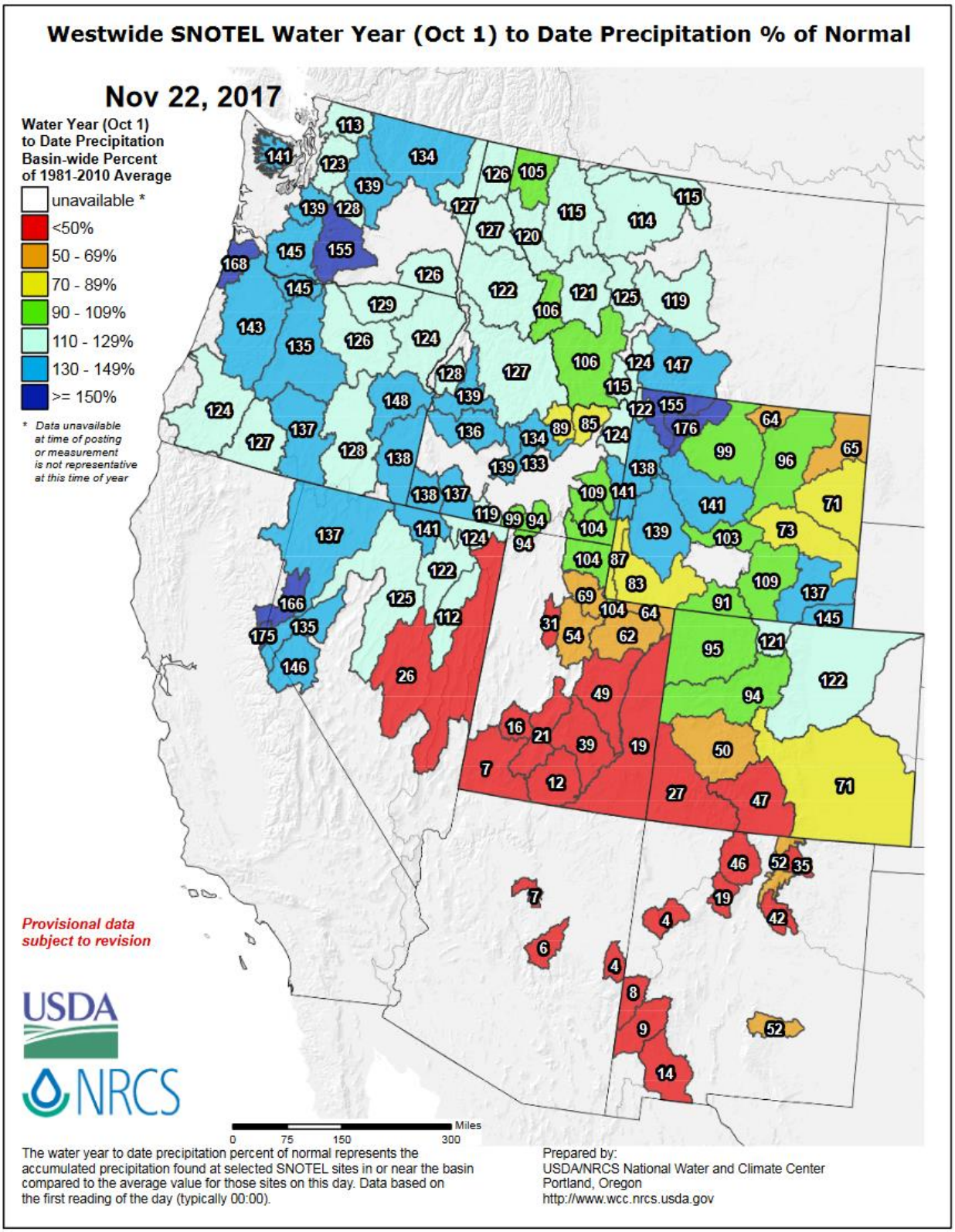
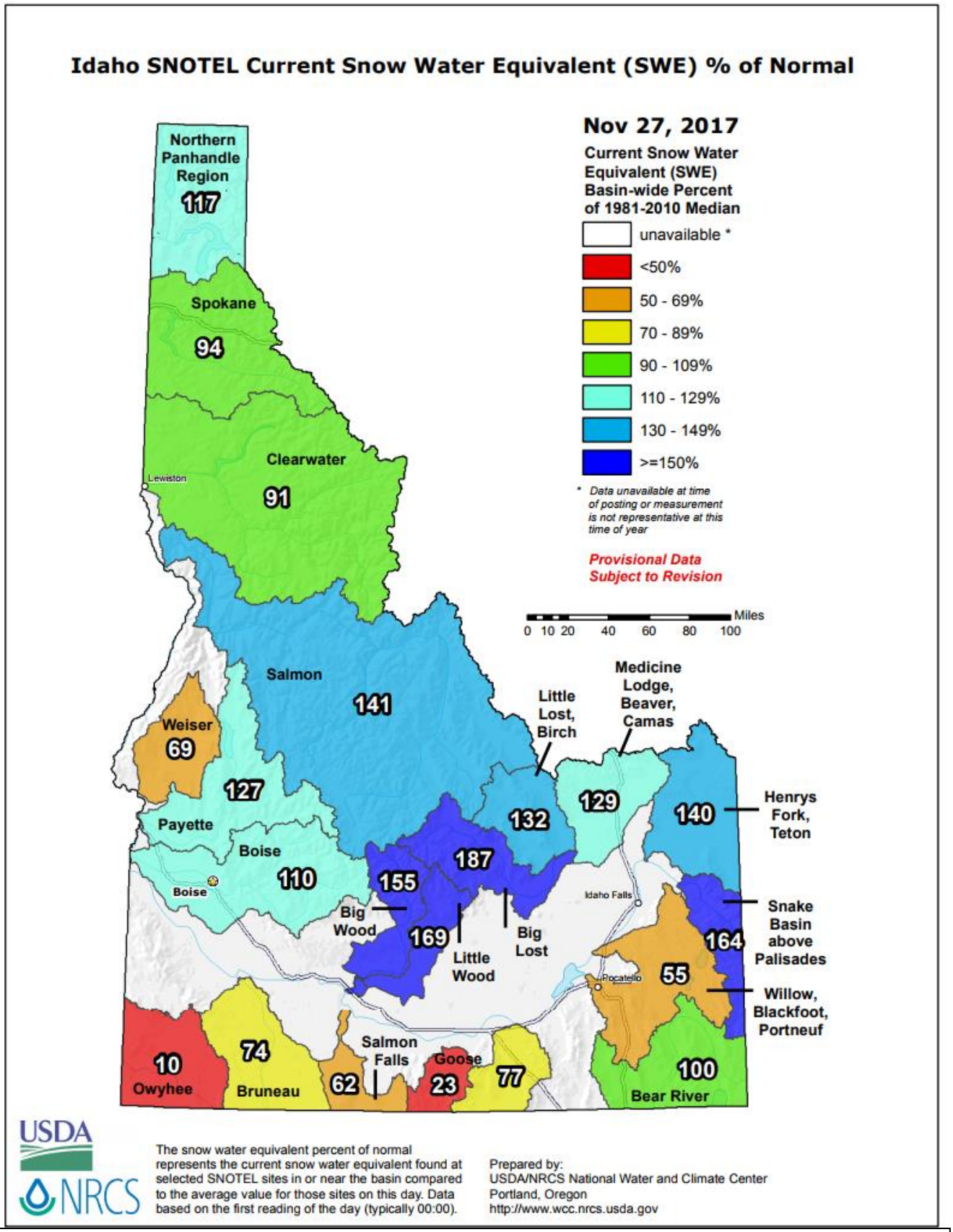
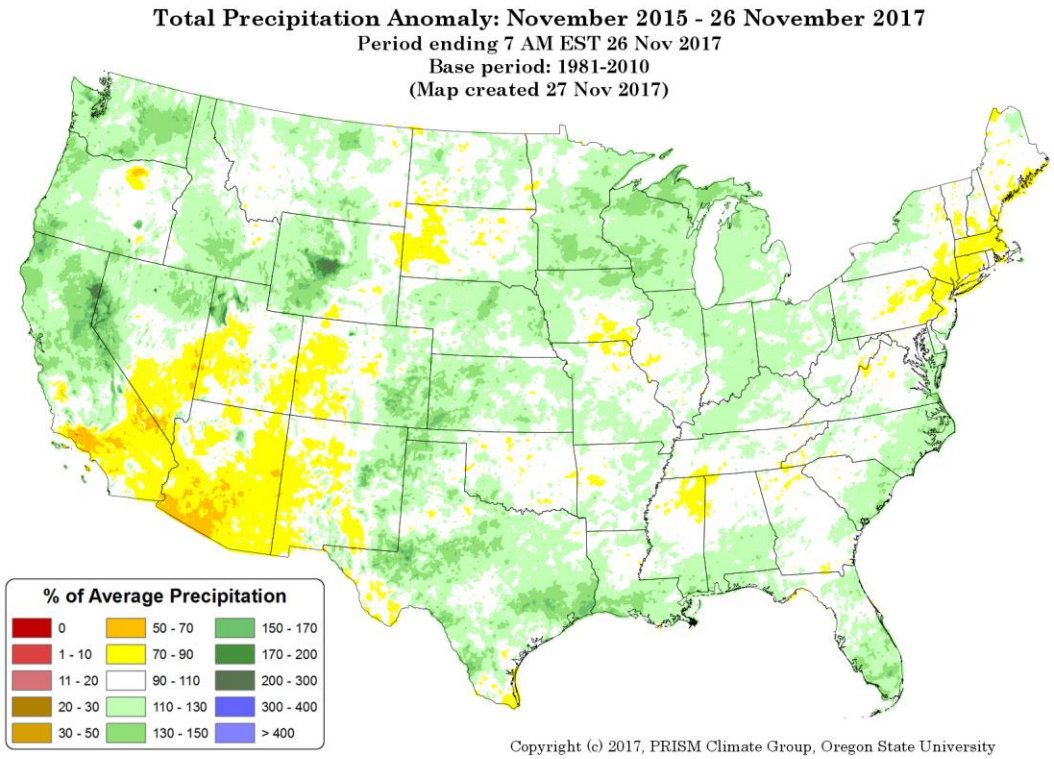


http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpctnormal_update.pdf

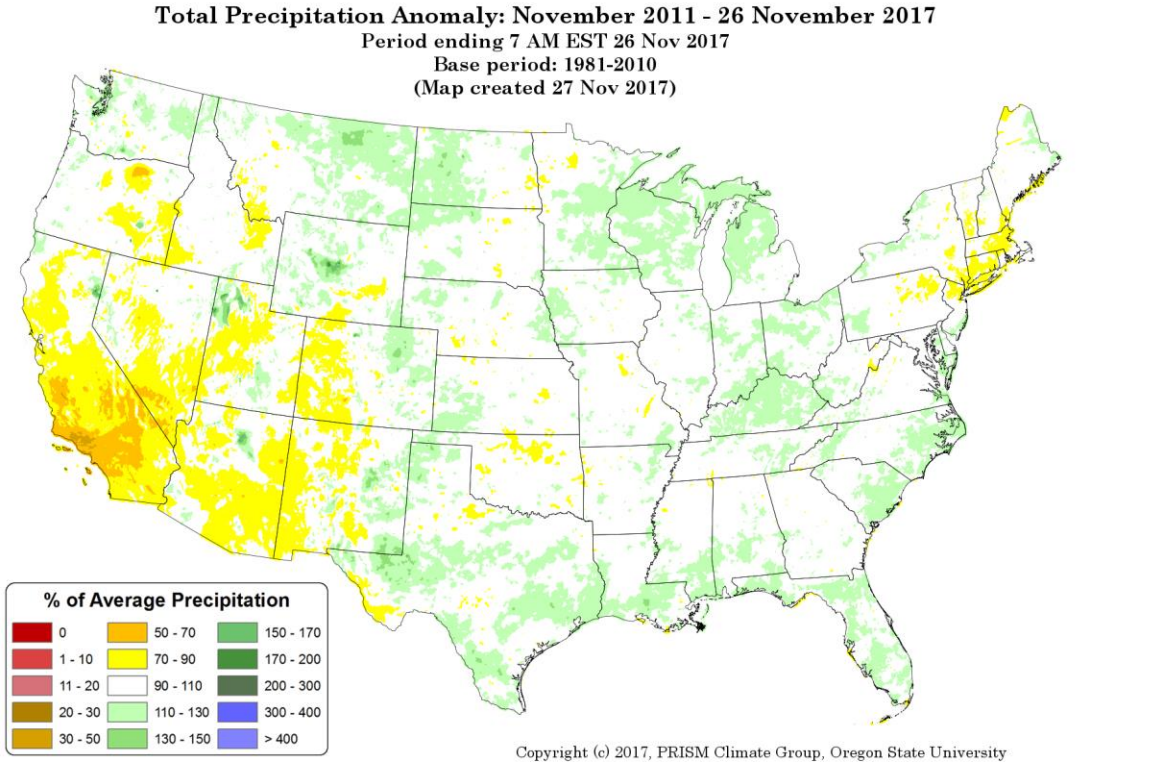


https://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_swepctnormal_update.pdf

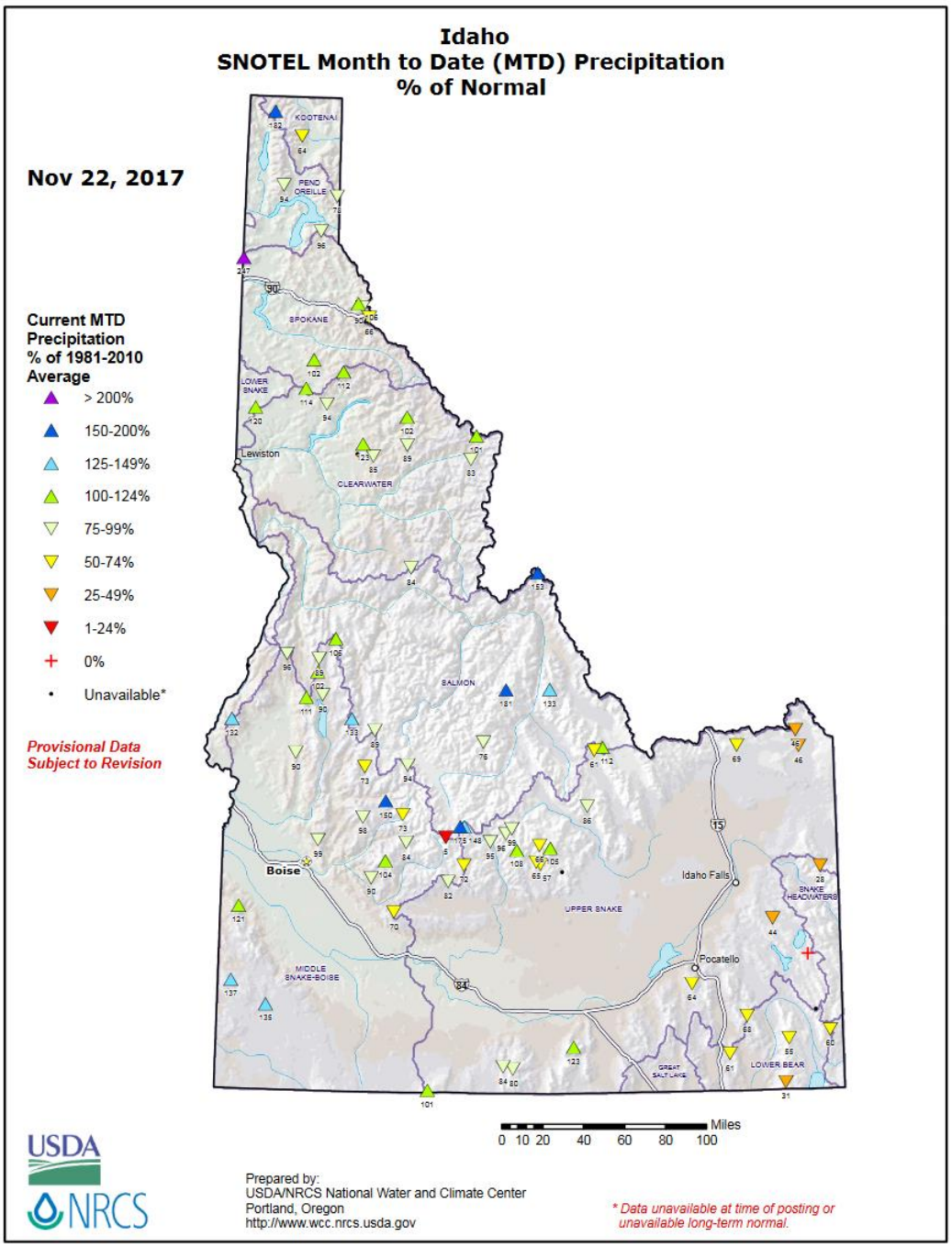
Past 2 Years of Precipitation % of Average:



Past 6 Years of Precipitation % of Average:



www.prism.oregonstate.edu/comparisons/drought.php



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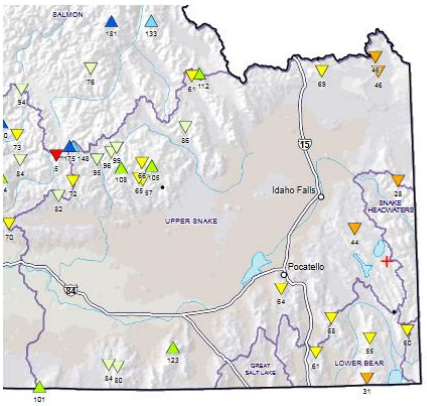
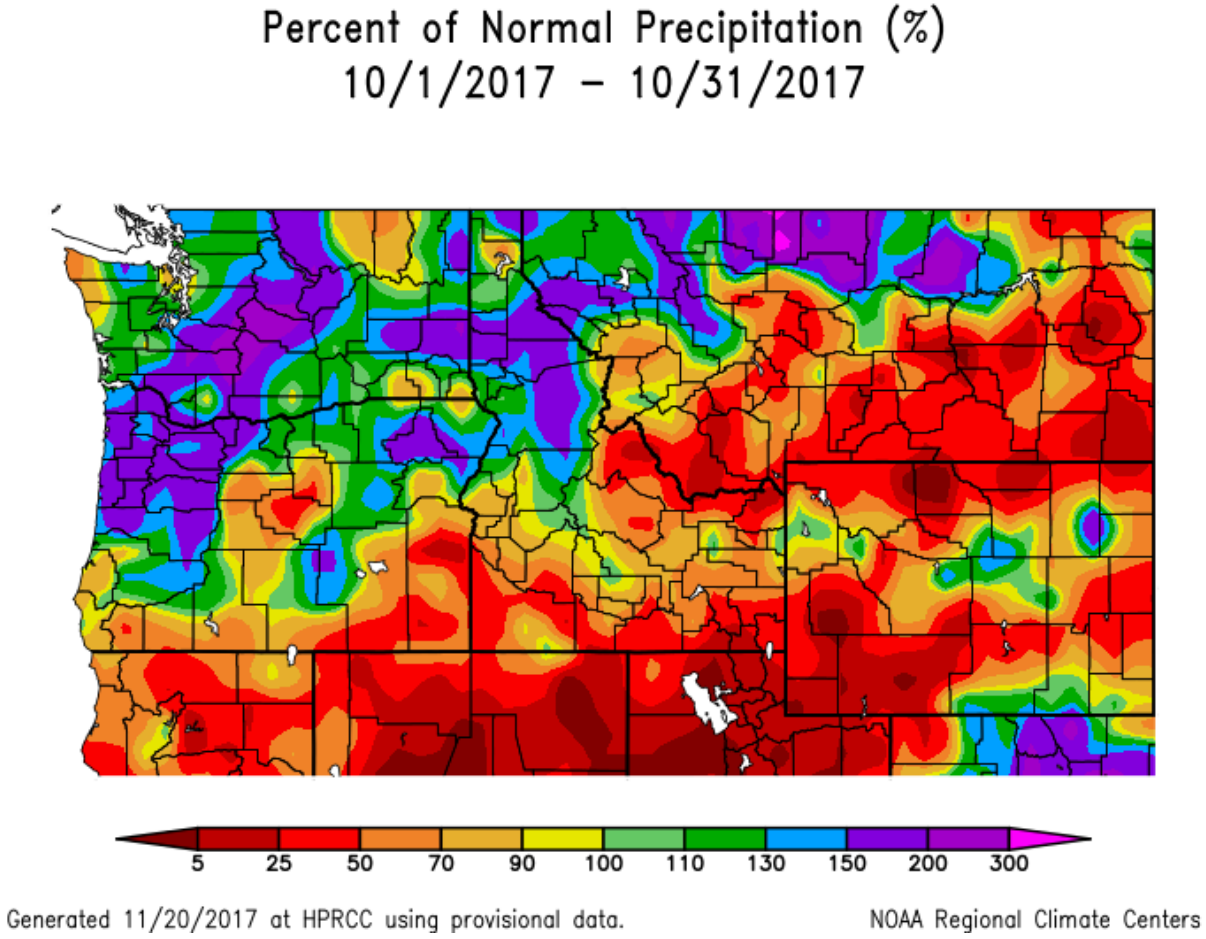


SNOTEL MTD % of Normal Precipitation for thru Mid November 2017
(image is cropped from above image)

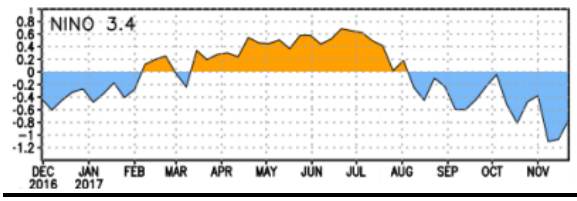


http://www.hprcc.unl.edu/maps.php?map=ACISClimateMaps

Most of our area received 25 to 90 percent of normal precipitation. Only the extreme Western Central mountains and the Teton mountains received normal to slightly above normal precipitaiton.

ENSO Update:

Latest Observed SST Departure:
Niño 3.4 ~ -0.8 Deg C



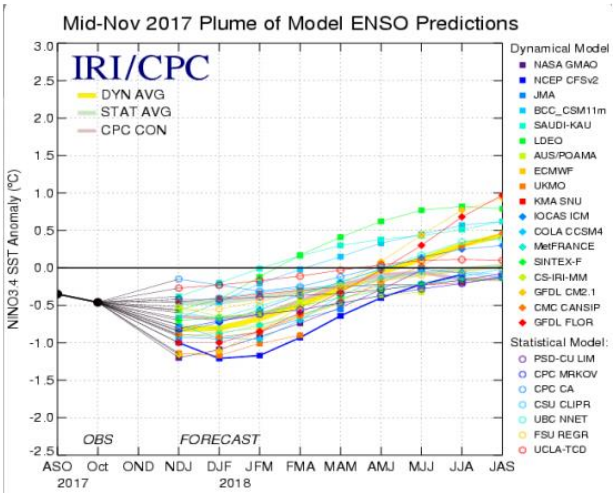


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 17 November 2017).

www.cpc.ncep.noaa.gov, **iri.columbia.edu/climate/ENSO**

CPC Synopsis: La Nina conditions are present. La Nina conditions are predicted to continue (~65%-75% chance) at least during the Northern Hemisphere winter 2017-2018.

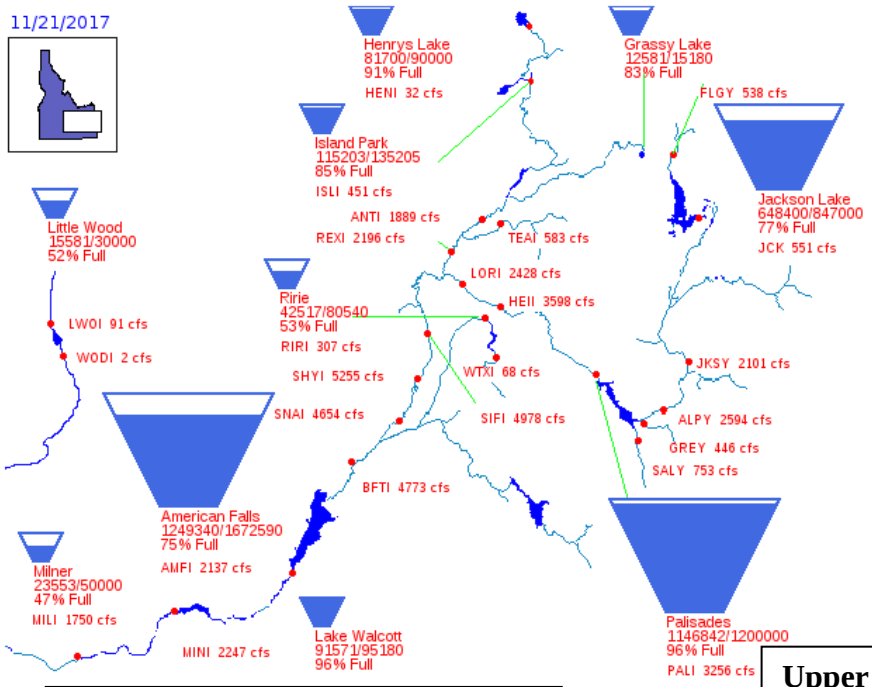
Note: Equatorial sea surface temperatures (SSTs) are below average across the central and eastern Pacific Ocean. The CPC velocity potential based and RMM-based MJO indices both depict an amplifying MJO signal over the western Maritime Continent. Little eastward propagation is currently evident. Dynamical model MJO index forecasts depict rapid shifts during Week-1 due to interactions among modes, however many solutions show a more robust MJO-like evolution over the West Pacific by Week-2. The Pacific Decadal Oscillation (PDO) continues to be slightly negative, -0.60.

Reservoirs:

Reservoir	% Capacity August 31[1]	% Capacity September 30[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	77	75	-2	155	117
Palisades	76	78	+2	141	41
Henrys Lake	91	89	-2	105	99
Island Park	81	83	+2	154	68
Grassy Lake	80	81	+1	110	114
Ririe	95	51	-44	116	115
Blackfoot	74	74	0	157	123
American Falls	49	63	+14	195	64
Mackay	86	86	0	374	144
Little Wood	42	40	-2	150	153
Magic	57	65	+8	229	119
Oakley	38	39	+1	182	71
Bear Lake	86	84	-2	183	74
Lake Walcott	96[3]	96[4]	0	n/a	n/a
Milner	68[3]	47[4]	-21	n/a	n/a

Source: (1) NRCS September 30, 2017; (2) NRCS October 31, 2017.
(3) US Bureau of Reclamation (BOR) Oct 18, 2017 (4) BOR Nov 21, 2017

http://www.wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_11_2017.pdf

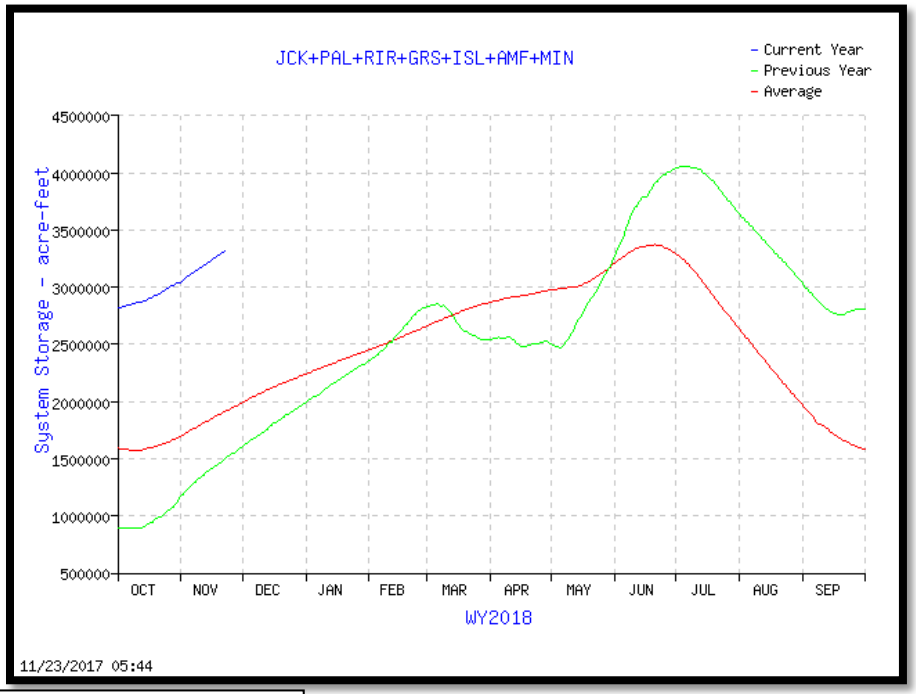


www.usbr.gov/pn/hydromet/burtea.html

82% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

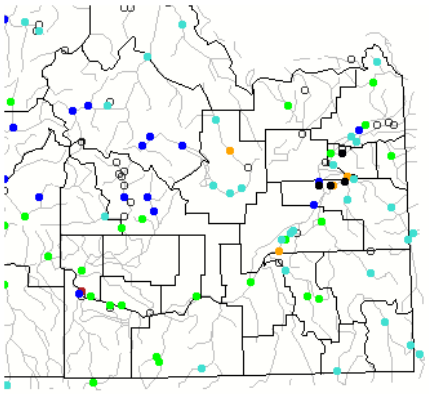
Upper Snake River:
Total Space Available: 729,135 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



https://www.usbr.gov/pn-bin/graphwy.pl?snasys_af

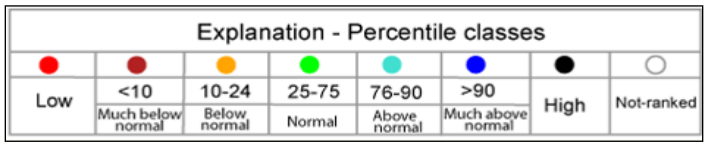
Streamflow:

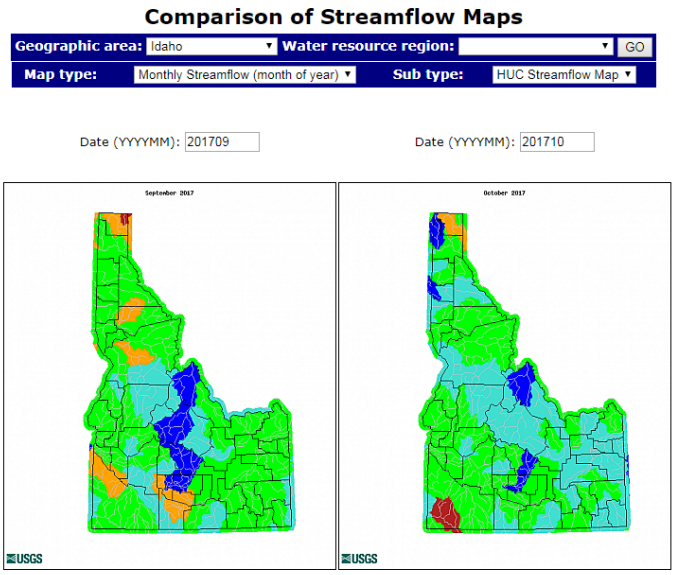


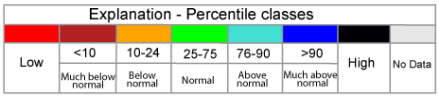
Monthly average streamflow compared to historical average streamflow for October 2017.

USGS

https://waterwatch.usgs.gov/index.php?r=id&id=mv01d

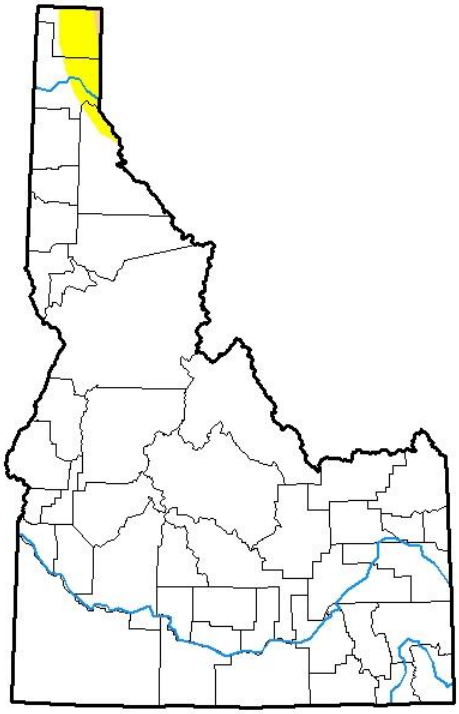


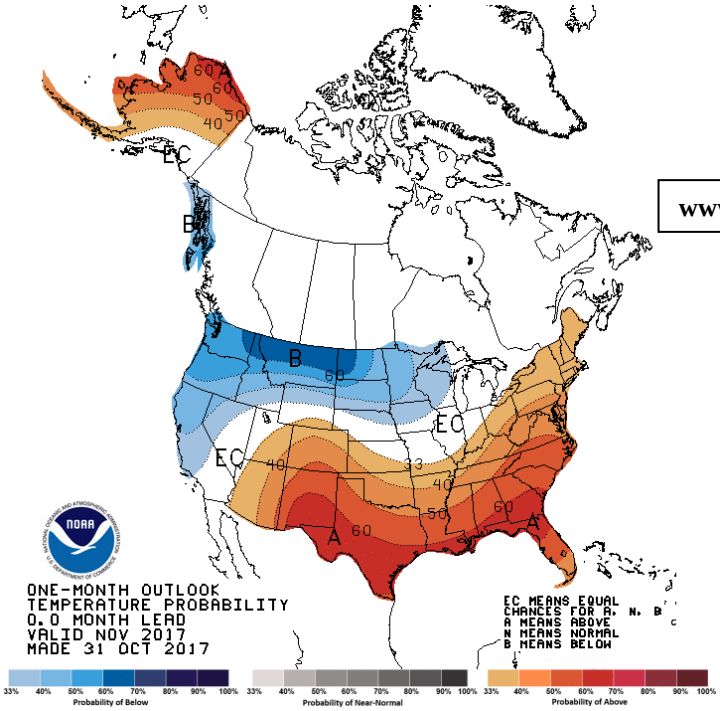




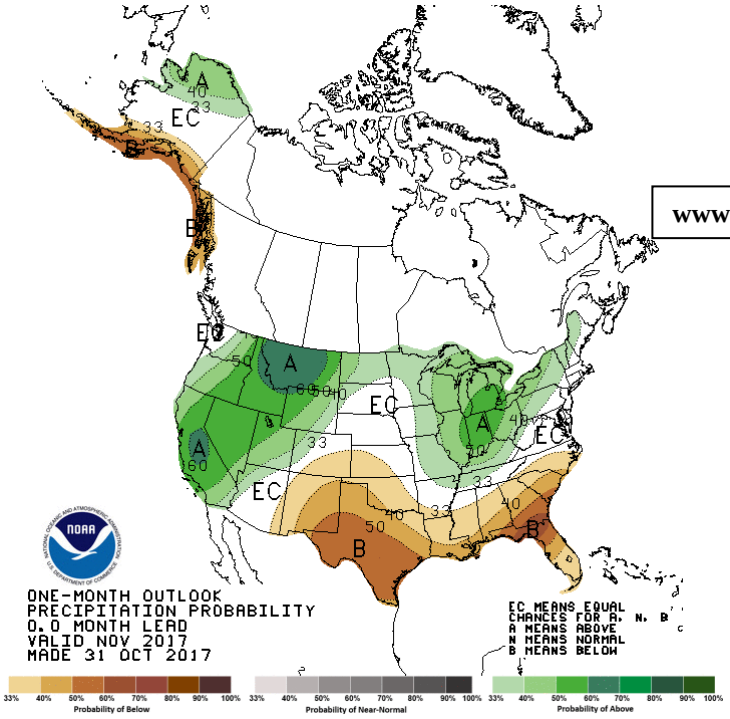
http://waterwatch.usgs.gov/index.php?id=wwchart_map2

Drought:





www.cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



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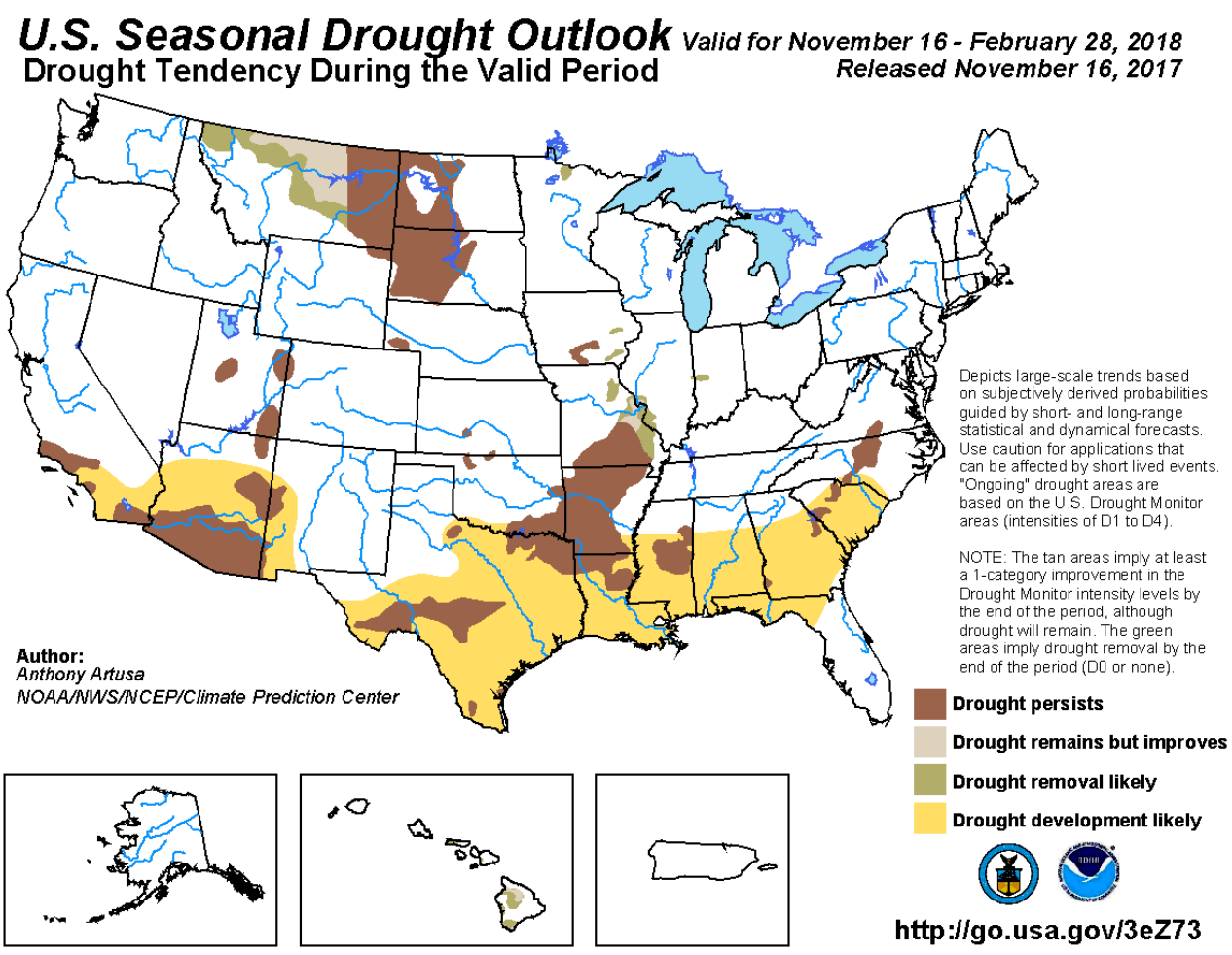

www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

cc:

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PIH Mets/HMT (pih.ops)

End

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